



382787

PETITION TO EXCLUDE PRETREATED
WASTEWATER FROM 40 CFR 261.3(a)(2)(ii)
AND 40 CFR 261.3(c)

GENERAL REQUIREMENTS UNDER 260.22

Section 260.20(b)(1)

Olin Corporation, Main Plant
427 North Shamrock Street
East Alton, IL 62024
USEPA RCRA Identification No. IL0006271696

RECEIVED
JUN 25 1984
ILL. E.P.A. - D.L.P.C.
STATE OF ILLINOIS

Section 260.20(b)(2)

Olin Corporation generates a pretreated wastewater that normally flows from its Zone 6 Waste Water Treatment Facility's Neutralization-Equalization Basin to other treatment units. This pretreated wastewater is also occasionally received by the Zone 6 Waste Water Treatment Facility's Emergency Holding Lagoon. Olin Corporation, as generator of this waste and as the party responsible for the costs of complying with all regulations applicable to this waste, desires to exclude this pretreated wastewater from 40 CFR 261.3(a)(2)(ii) and 40 CFR 261.3(c), and to exclude the Emergency Holding Lagoon from the management standards issued by the United States Environmental Protection Agency under Sections 3002 through 3006 of the Resource Conservation and Recovery Act of 1976 as amended (40 CFR Parts 122 through and 124 and Parts 262 through 265).

Section 260.20(b)(3)

It is proposed that the United States Environmental Protection Agency grant Olin Corporation a regulatory amendment, as provided under 40 CFR 260.22(b), to exclude from 40 CFR 261.3(a)(2)(ii) and 40 CFR 261.3(c) its pretreated wastewater that is discharged from its Zone 6 Waste Water Treatment Facility's Neutralization-Equalization Basin, and thereby also exclude Olin Corporation's Zone 6 Waste Water Treatment Facility's Emergency Holding Lagoon from the management standards issued pursuant to Sections 3002 through 3006 of the Resource Conservation and Recovery Act of 1976 as amended (RCRA). Olin Corporation further requests that, pending a final determination by the Administrator, the United States Environmental Protection Agency grant Olin a temporary exclusion pursuant to 40 CFR 260.22(m).

Section 260.20(b)(4)

The purpose of this de-listing petition is to avoid the costs and complexities of complying with hazardous waste regulations for a

non-hazardous material which is occasionally held in an Emergency Holding Lagoon.

Olin Corporation's East Alton, Illinois, Zone 6 Waste Water Treatment Facility treats the wastewater from the manufacture of copper and copper-based alloy sheet and strip, and from the manufacture of small arms ammunition. The Zone 6 Waste Water Treatment Facility (See Schematic I) uses a lime and polymer treatment process to precipitate heavy metals as hydroxides.

The wastewater first enters a flash tank where hydrated lime is fed in a controlled dosage to adjust the pH to a control range of 5.5 to 7.5. It then enters the Neutralization-Equalization (N & E) Basins where it has a retention time of 4 hours based on a design flow rate of 6.25 million gallons per day. The actual flow rate is 2.0 to 3.5 million gallons per day. The initial settling of metal hydroxides takes place in the N & E Basins.

Leaving the N & E Basins, the wastewater receives a final lime trim that adjusts the pH to approximately 9.0, and a suitable polymer is added to assist in flocculation. The wastewater then enters the parallel clarifiers for a retention time of 9 hours (based on a design flow rate of 6.25 million gallons per day with an actual flow rate of 2.0 to 3.5 million gallons per day) before being discharged from the treatment plant.

During periods of excessive storm flow, and at times when flow through the two clarifiers must be held up, all or part of the wastewater from the N & E basins is diverted to the Emergency Holding Lagoon. Because this Emergency Holding Lagoon is empty most of the time, and because it contains wastewater and sludge that are shown to be non-hazardous in the accompanying analyses during the brief periods that it is in use, Olin Corporation is petitioning the Administrator for a regulatory amendment to exclude the wastewater that is sometimes contained in this Emergency Holding Lagoon from 40 CFR Part 261.3(a)(2)(ii) and 40 CFR Part 261.3(c) in accordance with 40 CFR Part 261.3(d)(2).

ADDITIONAL REQUIREMENTS UNDER SECTION 260.22

Section 260.22(i)(1)

The following are the name and address of the facility performing the tests of the pretreated wastewater:

Environmental Analysis, Inc.
3278 North Lindbergh Blvd.
Florissant, MO 63033

Section 260.22(i)(2)

The names and qualifications of persons performing sampling and testing are as follows:

Sampling by Olin Corporation

Sampling was done by Olin Corporation personnel J. A. Clark and J. M. Grana. Mr. Clark holds a B.S. in Mechanical Engineering and has worked at Olin for 17 years in Plant Engineering, four years as Special Projects Engineer, and nine years in Environmental Engineering. Mr. Grana holds a B.S. in Chemical Engineering and has worked for one year in Environmental Engineering at Olin Corporation.

Testing by Environmental Analysis, Inc.

The testing was done under the direction of Ronald M. Ferris, President of Environmental Analysis, Inc. His qualifications and those of the analysts in his laboratory are given in Appendix 1, Pages 1 and 2.

Section 260.22(i)(3)

Dates of Sampling and Testing

Olin Corporation obtained samples of the N & E Basin effluent on February 23, 24, 25, 26, and 27, 1981. Testing was performed by Environmental Analysis, Inc. on March 2, 1981, for the February 23, 1981, sample and March 11, 1981, for the samples dated February 24 through February 27. A sample of the N & E Basin sludge was obtained on July 29, 1981, and testing was performed on August 10, 1981. The results of all tests are set forth in Appendix II.

Section 260.22(i)(4)

The location of the generating facility is:

Olin Corporation, Main Plant
427 North Shamrock Street
East Alton, Illinois 62024
USEPA RCRA Identification No. ILD006271696.

Section 260.22(i)(5)

In its Part A, Interim Status RCRA Permit Application for its Main Plant facility in East Alton, Illinois, Olin Corporation considered the wastewater in its Zone 6 Waste Water Treatment Facility as hazardous for the following listed wastes: F006, F007, F008, F009, K044, and K046.

The various hazardous wastes potentially in the wastewater entering the treatment plant, as listed in our Part A Application, will be discussed in the sequential order in which they were listed in said Application. It must be understood that this petition seeks exclusion from the RCRA listed wastes of the wastewater which has already received the first stage of its treatment, and after which it may occasionally be stored

for short periods of time in the Emergency Holding Lagoon. This petition does not seek to exclude the untreated wastewater that enters the treatment plant which was covered in the Part A RCRA Application.

F006

The definition of the waste identified as F006 is taken from the Federal Register (46 FR 4618, 1-16-81) as follows:

F006 Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum. (T)

The basis for the listing of this material as a hazardous waste is taken from the Federal Register (46 FR 4619, 1-16-81) and is as follows:

F006 Cadmium, hexavalent chromium, nickel, cyanide (complexed).

The listing in Olin's Part A RCRA Application of the wastewater as containing the hazardous waste F006 was done to incorporate three separate small plating facilities. One plates nickel onto copper and copper alloy products; another deposits an industrial type chrome plating onto steel; and the third plates copper onto lead and steel.

The Nickel Plating Facility

Olin's nickel plating facility (See Schematic II) uses trisodium phosphate followed by sulfuric acid as a pre-cleaning operation. The parts are then given a flash coating of nickel in a plating bath containing nickel chloride, nickel sulfide, boric acid, sulfuric acid, electroplating nickel buttons, and proprietary brighteners.

Following the plating operation, the parts are given a water rinse, cleaned with detergent and hot water, and then passed through a dryer.

There is no pretreatment provided for the wastewater from this operation since the contaminants are compatible with the treatment process at Olin's Zone 6 Waste Water Treatment Facility. The plating bath is seldom changed, and plating chemicals are added as required. The plating sludge is removed periodically and does not enter the wastewater system.

where does it go?

The Chrome Plating Facility

Olin's chrome plating operation plates (See Schematic III) chrome onto steel to obtain desired properties on machine tools (punches, etc.). The tools are first stripped of previous chrome plating in a sodium hydroxide solution in a reverse plating operation. After a cold water rinse, they are etched in a sulfuric acid solution. Next, they are preheated and rinsed in a hot water bath (180° - 200°F).

The tools are then manually transferred to the plating tank. The plating solution consists of chromic acid, sulfuric acid, and demineralized water. From the plating tank the tools are manually transferred back to the clear water rinse.

The two water rinse tanks and the water preheat tank are continuous flow tanks in that there is a small continuous flow of hot or cold water into and out of these tanks into the sump underneath. The loss of solutions from any of the other tanks would be from drag-out or accidental spillage and would also be caught in the sump underneath.

All of the stripping, cleaning, plating, and washing operations are performed over a large, single, shallow collection sump. The sump solution is pumped into a four-compartment pretreatment process where any hexavalent chromium is reduced to trivalent chromium and the pH is adjusted for discharge to the plant sewer system.

Whenever the plating tanks are taken out of service for repair or replacement, the solution and sludge are disposed of by other means and are not permitted to enter the wastewater system.

The Copper Plating Facility

Olin's Copper Plating Facility (See Schematic IV) is a batch type operation which plates copper onto steel and copper onto lead. The plating of the two metals (steel and lead) is done in separate tanks. The steel plating bath contains sodium cyanide, sodium hydroxide, copper metal and proprietary brighteners. The plating bath for lead contains the same solution without the brighteners.

The entire plating line that plates both metals is completely automatic, and is operated entirely by a micro-computer. The only non-automatic operation is charging the batches into the plastic perforated drums prior to the operation and adding the necessary chemicals when required.

Any spillage of the plating solution and subsequent rinses goes to an automatic cyanide destruct system and settling sump before it is discharged into the plant wastewater collection system. This cyanide pretreatment operation employs the alkaline chlorination process to convert the cyanide to cyanate. This process is

controlled by an Oxidation Reduction Potential (ORP) indicator-recorder/controller that controls the feed rate of sodium hypochlorite into the treatment tank. The ORP controller is also interlocked with the supply pump to interrupt the influent of the cyanide-contaminated wastewater into the cyanide pretreatment process and sound an alarm if the ORP deviates from a predetermined control setting.

The pH in the pretreatment process is maintained at approximately 10.0 by sodium hydroxide contained in the sodium hypochlorite treatment solution. The pH in the process is monitored by a pH indicator/recorder. This is an indicator/recorder only; it performs no control or alarm functions.

As stated previously, the potential toxic pollutants in the wastes listed for the F006 identification number are cadmium, chromium, nickel and cyanide. No cadmium is used in any of the previously described plating operations, and the attached Extraction Procedure analyses (Appendix II) show that the maximum cadmium concentration is 0.005 p.p.m. This concentration is far less than the maximum allowable (1.0 p.p.m.) permitted by the regulations at 40 CFR 261.24.

The hexavalent chromium is unaffected by Olin's Zone 6 Waste Water Treatment Process. The Extraction Procedure Analyses (Appendix II) show that the maximum concentration is 0.027 p.p.m. This concentration is far less than the maximum allowable (5.0 p.p.m.) permitted by the regulations at 40 CFR 261.24.

The same analyses in Appendix II show that the highest concentration of nickel was 2.39 p.p.m. The Agency has previously determined that nickel concentrations of less than 10 p.p.m. are not of regulatory concern (46 FR 17198, 3-18-81).

The only plating line of the three plating operations described above that uses cyanide is the copper plating operations. The attached Extraction Procedure Analyses (Appendix II) show that the maximum concentration of total cyanide was 0.021 p.p.m. The Agency has previously determined that cyanide concentrations in this range are not of regulatory concern (46 FR 17196-17202, 3-18-81).

F007, F008, F009

The definitions of the wastes identified as F007, F008, and F009 are taken from the Federal Register (46 FR 4618, 1-16-81) as follows:

F007 Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions). (R,T)

F008 Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating bath sludges). (R,T)

F009 Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions). (R,T)

The bases for the listing of these materials as hazardous wastes are taken from the Federal Register (46 FR 4619, 1-16-81) as follows:

F007 - Cyanide (salts)
F008 - Cyanide (salts)
F009 - Cyanide (salts)

The listing in Olin's Part A RCRA Application of the wastewater as containing the hazardous wastes numbered F007, F008, and F009 was done to incorporate the copper plating facility that was described in the discussion for hazardous waste No. F006.

The objectionable pollutant and characteristic in the F007, F008, and F009 listed wastes are cyanide (salts) and reactivity. As previously discussed, the attached Extraction Procedure Analyses (Appendix II) show that the maximum total cyanide was 0.021 p.p.m. The Agency has previously determined that cyanide concentrations in this range are not of regulatory concern (46 FR 17196-17202, 3-18-81).

Due to this low concentration of cyanide, the wastewater therefore does not meet the characteristic of reactivity in 40 CFR Part 261.23(a)(5). The Agency has previously determined that cyanide concentrations in the reported range are not of regulatory concern (46 CFR 17196-17202, 3-18-81).

K044, K046

The definitions of the wastes identified as K044 and K046 are taken from the Federal Register (46 FR 4619, 1-16-81) as follows:

K044 Wastewater treatment sludges from the manufacturing and processing of explosives. (R)

K046 Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds. (T)

The bases for the listing of these materials as hazardous wastes are taken from the Federal Register (46 FR 4619, 1-16-81) as follows:

K044 - Reactivity
K046 - Lead

The listing in Olin's Part A RCRA Application of the wastewater as containing hazardous wastes numbered K044 and K046 was done to incorporate discharges from the explosives and ammunition manufacturing operations. These wastewater discharges make up approximately 2 - 4 percent of the total wastewater flow to the Zone 6 Waste Water Treatment Facility.

All of the process wastewater containing explosives (including lead-based initiating compounds) passes through a settling pit (kill sump) where any entrained particles of explosives settle out. Periodically, a portion of the wastewater in the kill sump is removed to accommodate the killing of the residual solids.

The killing procedure consists of the agitation of the sump contents (liquids and solids) while adding predetermined quantities of sodium hydroxide and aluminum powder. The heat of reaction normally raises the temperature of the material to 100° to 120°F. If this temperature is not attained during winter operations, steam is used to heat the materials to the desired temperature. The agitation continues for approximately 30 minutes.

At the end of this procedure, a sample ($\frac{1}{2}$ to 1 gram) of the solids is taken from the sump and tested on a hot plate that operates at a temperature of 400° to 500°C (sufficient to char paper and wood) to assure that all explosive solids have been rendered inert prior to discharge.

Following the kill process, the inert material from the smaller sumps is flushed into the plant wastewater collection system. The inert solids from the larger sumps are removed by other means and do not enter the wastewater system. — *where do they go*

K044 is listed for the characteristic of Reactivity because it contains explosives. The attached analyses (Appendix II) of the effluent wastewater from the N & E Basin for which we are petitioning an exclusion, show that it is composed of a minimum of 99.97% water. This waste stream, therefore, does not meet the criteria for reactivity. Furthermore, because all the explosives are killed, and the killing is verified for completeness following the kill process and prior to its release into the plant wastewater collection system, solid residues in the waste stream do not meet the criteria for reactivity.

K046 is listed for the characteristic of Toxicity, due to lead. The attached analyses (Appendix II) exhibit a maximum E.P. lead concentration of 0.05 p.p.m. for both the wastewater and the residue contained in the Emergency Holding Lagoon. This is two orders of magnitude below the 5.0 p.p.m. concentration identified by the Agency as hazardous (40 CFR 261.24).

Summary

As a result of the factors discussed above and the fact that cadmium is not used in any of Olin's processes, the Extraction Procedure Analyses (Appendix II) show that cadmium, hexavalent chromium, nickel, and cyanide concentrations in the discharge from the Zone 6 Waste Water Treatment Facility's Neutralization-Equalization Basin are well within the limits allowed at 40 CFR 261.24 and are well within concentrations of regulatory concern to the Agency (46 FR 17196-17202, 3-18-81). Furthermore, the Extraction Procedure Analyses (Appendix II) also show that lead concentrations in the discharge from the aforementioned Neutralization-Equalization Basin are well within the limits allowed at 40 CFR 261.24, and that the same discharge is 99.97% water and, therefore, not reactive. Olin Corporation therefore requests that the United States Environmental Protection Agency grant this regulatory amendment to exclude Olin's pretreated wastewater that is discharged from the Neutralization-Equalization Basin from 40 CFR 261.3(a)(2)(ii) and 40 CFR 261.3(c), and thereby also exclude the Emergency Holding Lagoon from the Management Standards issued pursuant to Sections 3002 through 3006 of the Resource Conservation and Recovery Act of 1976, as amended.

Section 260.22(i)(6)

The monthly maximum flow through the Zone 6 Waste Water Treatment Facility is 170 million gallons. The monthly average flow through this facility is 80.38 million gallons. The annual flow of wastewater through Olin's Zone 6 Waste Water Treatment Facility is 923 million gallons.

The Emergency Holding Lagoon is used on an average of once per month with a typical holding time of two days. The total storage capacity of the Emergency Holding Lagoon is 1 million gallons.

Section 260.22(i)(7)

See the information presented herein under Section 260.22(i)(5).

Section 260.22(i)(8)

The equipment used for sampling of Olin's pretreated wastewater included a Masterflex Interval Sampler Model No. 7576 which was manufactured by Horizon Ecology Company. Also used was an Eagle Signal Percent Timer. There was no model number available for this piece of equipment.

The timer was set for a predetermined percentage of 15-minute intervals of sampling at the discharge of the Neutralization-Equalization Basin to obtain the five 24-hour composites of the wastewater for which Olin seeks a de-listing. The Emergency Holding Lagoon Sludge was taken from random sampling over the floor of the Lagoon.

1 2

No preservation methods were employed on any of the samples.

Section 260.22(i)(9)

A description of the sample handling and preparation techniques, including the techniques used for extraction, can be found in Appendix III.

Section 260.22(i)(10)

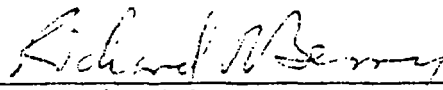
The tests performed on the samples collected by Olin Corporation are set forth in Appendix II, Pages 1 through 9. The results of said tests are included therein.

Section 260.22(i)(11)

The names and model numbers of the instruments used in performing the tests are set forth in Appendix III.

Section 260.22(i)(12)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.



Richard R. Berry
Vice President, Olin Corporation,
and President, Brass Group

Dated November 5, 1981

APPENDIX II
ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORISSANT, MO 63033

PHONE
1-314-921-4488

Date: March 2, 1981
Report No. 7380
P.O. No. EA-SO-1801-

ENVIRONMENTAL
ANALYSIS
INC.

Mr. J. A. Clark
OLIN CORPORATION
Brass Division
E & E Engineering
East Alton, Illinois 62024

REPORT OF ANALYSIS

Subject: Analysis performed in accordance with Resource Conservation and Recovery Act 40 CFR; 261.23, Characteristics of Reactivity and 261.24 Characteristics of EP Toxicity as published in the Federal Register on Monday, May 19, 1980.

Sample Identification: Sample marked as; N & E Effluent, dated February 23, 1981.

Results of Analysis:

<u>Test Required</u>	<u>N & E Effluent</u>
Cadmium, mg Cd/l	< 0.001 ✓
Chromium (total), mg Cr/l	0.046 ✓
Chromium (hex.), mg Cr/l	0.027 ✓
Cyanide (soluble), mg CN/l	< 0.001 ✓
Cyanide (total), mg CN/l	0.003 ✓
Lead, mg Pb/l	< 0.01 ✓
Nickel, mg Ni/l	0.40 ✓
pH Value, pH Units	7.07
Solids, % w/v	0.002
Sulfide (soluble), mg S/l	0.01

Respectfully submitted,


R. M. Ferris
President, EAI

APPENDIX II
ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORISSANT, MO 63033

PHONE
1-314-921-4488

Date: March 11, 1981
Report No. 7414
P.O. No. EA-SO-1361-

ENVIRONMENTAL
ANALYSIS
INC.

Mr. J. A. Clark
CLIN CORPORATION
Brass Division
E & E Engineering
East Alton, Illinois 62024

REPORT OF ANALYSIS

Subject: Analysis performed in accordance with Resource Conservation and Recovery Act 40 CFR; 261.23, Characteristics of Reactivity and 261.24, Characteristics of EP Toxicity, as published in the Federal Register on Monday, May 19, 1980.

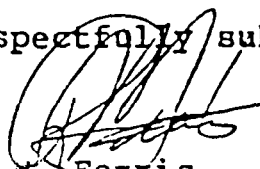
Sample Identification: Sample marked as; N & E Effluent, dated February 24, 1981.

Results of Analysis:

<u>Test Required</u>	<u>N & E Effluent</u>
Cadmium, mg Cd/l	< 0.001✓
Chromium (total), mg Cr/l	0.006✓
Chromium (hex.), mg Cr/l	< 0.005✓
Cyanide (soluble), mg CN/l	< 0.001✓
Cyanide (total), mg CN/l	0.009✓
Lead, mg Pb/l	0.05
Nickel, mg Ni/l	0.56
pH Value, pH Units	6.97
Solids, % w/v	0.008
Sulfide (soluble), mg S/l	< 0.01

see this E

Respectfully submitted,


R. M. Ferris
President, EAI

APPENDIX II
ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORISSANT, MO 63033

PHONE
1-314-921-4488

ENVIRONMENTAL
ANALYSIS
INC.

Date: March 11, 1
Report No. 7415
P.O. No. EA-30-186-2

Mr. J. A. Clark
OLIN CORPORATION
Brass Division
E & E Engineering
East Alton, Illinois 62024

REPORT OF ANALYSIS

Subject: Analysis performed in accordance with Resource Conservation and Recovery Act 40 CFR; 261.23, Characteristics of Reactivity and 261.24, Characteristics of EP Toxicity, as published in the Federal Register on Monday, May 19, 1980.

Sample Identification: Sample marked as; N & E Effluent, dated February 25, 1981.

Results of Analysis:

Test Required

N & E Effluent

Cadmium, mg Cd/l	0.001✓
Chromium (total), mg Cr/l	< 0.005✓
Chromium (hex.), mg Cr/l	< 0.005✓
Cyanide (soluble), mg CN/l	< 0.001
Cyanide (total), mg CN/l	0.015
Lead, mg Pb/l	0.05✓
Nickel, mg Ni/l	0.68✓
pH Value, pH Units	6.91
Solids, % w/v	0.003
Sulfide (soluble), mg S/l	< 0.01

Respectfully submitted,


R. M. Ferris
President, EAI

APPENDIX II
ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORISSANT, MO 63033

PHONE
1-314-921-4488

ENVIRONMENTAL
ANALYSIS
INC.

Date: March 11,
Report No. 7416
P.O. No. EA-SO-18

Mr. J. A. Clark
OLIN CORPORATION
Brass Division
E & E Engineering
East Alton, Illinois 62024

REPORT OF ANALYSIS

Subject: Analysis performed in accordance with Resource Conservation and Recovery Act 40 CFR; 261.23, Characteristics of Reactivity and 261.24, Characteristics of EP Toxicity as published in the Federal Register on Monday, May 19, 1980.

Sample Identification: Sample marked as; N & E Effluent, dated February 26, 1981.

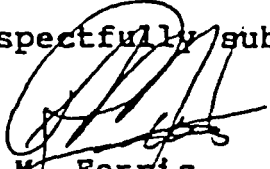
Results of Analysis:

Test Required

N & E Effluent

Cadmium, mg Cd/l	0.005 ✓
Chromium (total), mg Cr/l	< 0.005 ✓
Chromium (hex.), mg Cr/l	< 0.005 ✓
Cyanide (soluble), mg CN/l	< 0.001 ✓
Cyanide (total), mg CN/l	0.008 ✓
Lead, mg Pb/l	0.04 ✓
Nickel, mg Ni/l	1.30 ✓
pH Value, pH Units	6.93
Solids, % w/v	0.031
Sulfide (soluble), mg S/l	< 0.01

Respectfully submitted,


R. M. Ferris
President, EAI

ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORISSANT, MO 63033

PHONE
1-314-921-4488

ENVIRONMENTAL
ANALYSIS
INC.

Date: March 11, 1981
Report No. 7417
P.O. No. EA-SO-1861

Mr. J. A. Clark
CLIN CORPORATION
Brass Division
E & E Engineering
East Alton, Illinois 62024

REPORT OF ANALYSIS

Subject: Analysis performed in accordance with Resource Conservation and Recovery Act 40 CFR; 261.23, Characteristics of Reactivity and 261.24, Characteristics of EP Toxicity, as published in the Federal Register on Monday, May 19, 1980.

Sample Identification: Sample marked as; N & E Effluent, dated February 27, 1981.

Results of Analysis:

<u>Test Required</u>	<u>N & E Effluent</u>
Cadmium, mg Cd/l	0.004 ✓
Chromium (total), mg Cr/l	0.012 ✓
Chromium (hex.), mg Cr/l	< 0.005 ✓
Cyanide (soluble), mg CN/l	< 0.001 ✓
Cyanide (total), mg CN/l	0.021 ✓
Lead, mg Pb/l	< 0.01 ✓
Nickel, mg Ni/l	2.39 ✓
pH Value, pH Units	7.14
Solids, % w/v	0.004
Sulfide (soluble), mg S/l	< 0.01

Respectfully submitted,


R. M. Ferris
President, EAI

APPENDIX II
ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORENSSAN, MO 63533

PHONE
1-314-921-4488

ENVIRONMENTAL
ANALYSIS
INC.

Date: August 10,
Report No. 8166
P.O. No. EA-SO-2215-

Mr. J. A. Clark
OLIN CORPORATION
Brass Division
E & E Engineering
East Alton, Illinois 62021

REPORT OF ANALYSIS

Subject: Analysis performed in accordance with the Resource Conservation and Recovery Act 40 CFR 261.22 and 261.24 Appendix II, EP Toxicity Test Procedure as published in the Federal Register on Monday, May 19, 1980.

Profile test was performed in accordance with I.E.P.A. Appendix B for Total Trace Metal Content in Benthic Muds, Sludges, and other Metal Bearing Waste Materials as prepared by Scott Miller, Stephen Muir and Frank J. Schmidt.

Corrosive Test for pH value, acidity, and alkalinity were performed in accordance with "Standard Methods for the Examination of Water and Wastewater, 14th Edition, 1975, page 460-465.

Flash Point Test was performed by the Pensky-Martin Closed Cup Tester, ASTM, STD D-93-79.

Reactivity Test for Soluble Cyanide and Soluble Sulfide were performed in accordance with "Standard Methods for the Examination of Water and Wastewater", 14th Edition, 1975, pages 502-506 and page 363 (2a).

Sample Identification: Zone 6 Emergency Holding Lagoon Sludge, dated, July 29, 1981; submitted July 30, 1981.

Results of Analysis: See attached sheets.

Respectfully submitted,


R. M. Ferris
President, EAI

3363 PARKER SPUR
FLORISSANT, MO 63033PHONE
1-314-921-4488ENVIRONMENTAL
ANALYSIS
INC.

Results of Analysis: Emergency Holding Lagoon Sludge

<u>Tests Required</u>	<u>Sample No.</u> <u>Emergency Holding Lagoon Sludge</u>
pH Value of 10% Solution	6.92
Alkalinity, ug CaCO ₃ /g	116200
Flash Point (P-M), F	> 210
Soluble Cyanide, mg CN/l	< 0.01
Soluble Sulfide, mg S/l	< 0.01
Volatiles at 100 C, %w/w	52.86
Volatiles at 600 C, %w/w	69.23



EAST ALTON, ILLINOIS 62024

April 1, 1982

Mr. William Sproat
U. S. Environmental Protection Agency
401 M St. S.W.
Washington, D.C. 20460

Re: Petition to Exclude Pretreated Wastewater

Dear Mr. Sproat:

Attached are copies of reports of additional analyses of Emergency Holding Lagoon Sludge and Neutralization and Equalization Basin Effluent. You requested these analyses in our January, 1982 telephone conversations about Olin's 11/5/81 Petition to exclude pretreated wastewater from 40 CFR § 261.3(a)(2)(ii) and 40 CFR § 261.3(c).

The reports show no concentrations in excess of RCRA EP test limits.

If you need further information before granting our Petition, please contact me.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'L. W. Maxson'.

L. W. Maxson, Director,
Energy & Environmental Services

Attachments
/bjv

EDWARD L. LINDBERGH
FLORISSANT MO. 63033

ENVIRONMENTAL
ANALYSIS
INC.

PHONE

1-314-921-1466

Date: 3-31-82
Report No. 9331
Lab No. 185-11
P.O. No. EA-SO-2246-

Mr. Wayne Galler
OLIN CORPORATION
Brass Division
E & E Engineering
East Alton, IL 62024

REPORT OF ANALYSIS

Subject: Analysis of waste samples performed in accordance with the Resource Conservation and Recovery Act 40 CFR; 261.21-Characteristic of Ignitability; 261.22-Characteristic of Corrosivity; 261.23-Characteristic of Reactivity; 261.24-Characteristic of EP Toxicity; and Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980.

Sample
Sample Identification:

- #1 - Zone 6 WWTF, Emergency Holding Lagoon #1, 3-10-82.
- #2 - Zone 6 WWTF, Emergency Holding Lagoon #2, 3-10-82.
- #3 - Zone 6 WWTF, Emergency Holding Lagoon #3, 3-10-82.
- #4 - Zone 6 WWTF, Emergency Holding Lagoon #4, 3-10-82.

Results of Analysis:

	# 1	# 2	# 3	# 4
Corrosivity, Test Method No.	261.22	261.22	261.22	261.22
pH Value, pH Units	7.08	7.10	7.07	7.03
Reactivity, Test Method No.	261.23	261.23	261.23	261.23
Cyanide (total), ug CN/g	16.7	15.4	10.0	7.6
Cyanide (Free), mg CN/l ^{EP}	0.05	<0.02	<0.02	<0.02
EP Toxicity, Test Method No.	261.24	261.24	261.24	261.24
Chromium (hex.), mg Cr/l	<0.005	<0.005	<0.005	<0.005
Lead, mg Pb/l	1.32	1.19	1.06	1.02

JOSEPH L. LINDBERGH
FLORISSANT, MO. 63031

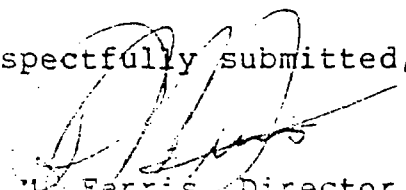
PHONE
1-314-921-1468

ENVIRONMENTAL
ANALYSIS
INC.

Results of Analysis:

	# 1	# 2	# 3	# 4
pH of Solution before TEP	7.05	6.80	6.90	7.10
pH of Solution after TEP	6.35	6.60	6.60	6.55
ml. 0.5 N HOAc/100g Sample	400	400	400	400

Respectfully submitted,


R. M. Ferris, Director

300 N. LINDBERGH
FLORISSANT, MO. 63033

PHONE
6314-931-4466

ENVIRONMENTAL
ANALYSIS
INC.

Date: 3-1-82
Report No. 9140
Lab No. 181-17
P.O. No. EA-SO-2246

Mr. J. Grana
OLIN CORPORATION
Brass Division
E & E Engineering
East Alton, IL 62024

REPORT OF ANALYSIS

Subject: Analysis of wastewater samples in accordance with
Standard Methods for the Examination of Water and
Wastewater, 15th Edition, 1980.

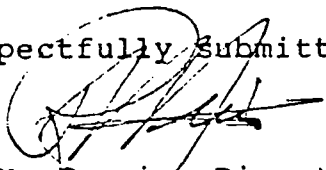
Sample Identification:

#1 - N & E Basin Effluent (24 Hr. Composite), 2-15-82.

Results of Analysis:

	# 1 ----
Cyanide (total), mg CN/l	0.021
Cyanide (Free), mg CN/l	0.005

Respectfully Submitted,


R. M. Ferris, Director

ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORISSANT, MO 63033PHONE
1-314-921-4488ENVIRONMENTAL
ANALYSIS
INC.

Results of Analysis:

U.S.E.P.A. - E P Toxicity Test: Emergency Holding Lagoon Sludge.

<u>Test Required</u>	<u>Sample No.</u> <u>Emergency Holding Lagoon Sldg.</u>
Arsenic, mg As/l	0.015
Barium, mg Ba/l	< 0.01
Cadmium, mg Cd/l	0.004 - <i>OK</i>
Copper, mg Cu/l	0.095
Chromium, mg Cr/l	0.001 - <i>OK</i>
Lead, mg Pb/l	0.05 - <i>OK</i>
Mercury, mg Hg/l	< 0.0005
Silver, mg Ag/l	0.006
Selenium, mg Se/l	0.016
Zinc, mg Zn/l	0.26
Nickel, mg Ni/l	< 0.01 - <i>OK</i>

ANALYTICAL CHEMISTRY - RESEARCH - FIELD STUDIES

3363 PARKER SPUR
FLORISSANT, MO 63033PHONE
1-314-921-4488ENVIRONMENTAL
ANALYSIS
INC.

Results of Analysis:

I.E.P.A. Profile Test: Emergency Holding Lagoon Sludge

<u>Test Required</u>	<u>Sample No.</u> <u>Emergency Holding Lagoon Sludge</u>
Arsenic, ug As/g	14.1
Barium, ug Ba/g	1455
Cadmium, ug Cd/g ppm	23.4
Chromium (hex), ug Cr/g ppm	< 2.5
Chromium (tot), ug Cr/g ppm	187
Copper, ug Cu/g	17800
Cyanide (tot), ug CN/g ppm	2.4
Lead, ug Pb/g ppm	9300
Mercury, ug Hg/g	< 5.0
Nickel, ug Ni/g	760
Selenium, ug Se/g	0.90
Silver, ug Ag/g	4.9
Zinc, ug Zn/g	15400
Moisture (105 C) . % w/w	52.86
Total Solids (105 C) , % w/w	47.14